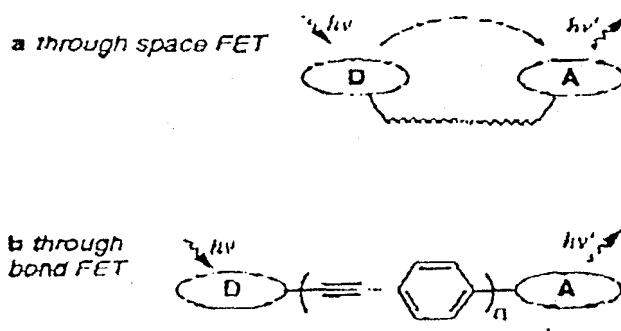
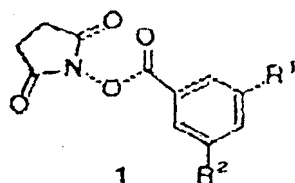


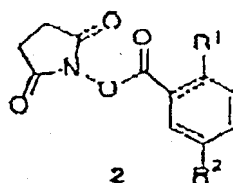
Figure 1. a Through space FET from a donor dye D to an acceptor dye A;  
b through bond FET.



FIGURES 1A & 1B



aa  $R^1 = R^2 = a$   
ab  $R^1 = a, R^2 = b$



aa  $R^1 = R^2 = a$   
ab  $R^1 = a, R^2 = b$

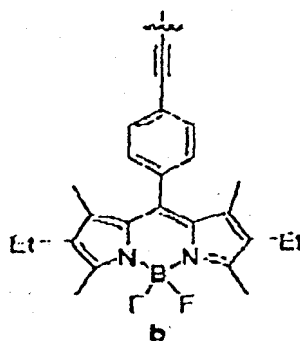
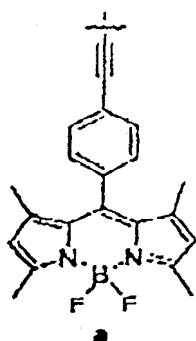
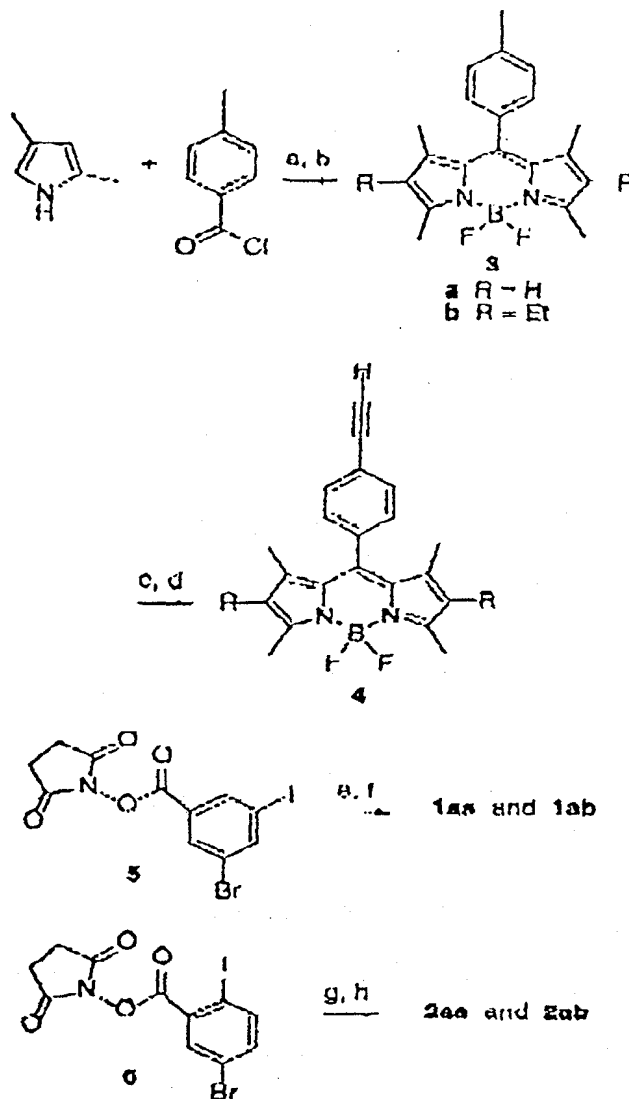


FIGURE 2



Scheme 1. Syntheses of the cassettes 1 and 2. a)  $\text{CH}_2\text{Cl}_2$  reflux; b)  $\text{BF}_3 \cdot \text{OEt}_2$ ,  $\text{NEt}_3$ , MePh, 80 °C, 26% (2 steps) for 3a and 39% (2 steps) for 3b; c) HCCTMS,  $\text{NEt}_3$ , cat.  $\text{Pd}(\text{PPh}_3)_4$ , cat.  $\text{CuI}$ , MePh 60 °C, 99% for a and 96% for b; d) TBAF, THF, 0 °C, 60% for a and 58% for b; e) 4a,  $\text{NEt}_3$ , cat.  $\text{Pd}(\text{PPh}_3)_4$ , cat.  $\text{CuI}$ , MePh 50 °C, 96%; f) 4a or 4b,  $\text{NEt}_3$ , cat.  $\text{Pd}(\text{PPh}_3)_4$ , cat.  $\text{CuI}$ , MePh 80 °C, 65% for 1aa and 23% for 1ab; g) 4a,  $\text{NEt}_3$ , cat.  $\text{Pd}(\text{PPh}_3)_4$ , cat.  $\text{CuI}$ , MePh 45 °C, 83%; h) 4a or 4b,  $\text{NEt}_3$ , cat.  $\text{Pd}(\text{PPh}_3)_4$ , cat.  $\text{CuI}$ , MePh 80 °C, 65% for 1aa and 17% for 1ab.

FIGURE 3

Table 1. Important spectroscopic data for compounds **4**, and the cassettes **1** and **2**.

	$\lambda_{\max}$ (abs) <sup>a</sup> (nm)	$\lambda_{\max}$ (ems) <sup>b</sup> (nm)	energy transfer (ET) efficiency <sup>b,c</sup> (%)	ratios of fluorescence intensities <sup>c</sup>
<b>4a</b>	504	515	-	-
<b>4b</b>	529	543	-	-
<b>1aa</b>	504	515	-	<b>1aa:4a</b> 1.5:1.0
<b>1ab</b>	505 and 529	542	>90	<b>1ab:4b</b> 2.2:1.0
<b>2aa</b>	504	516	-	<b>2aa:4a</b> 1.6:1.0
<b>2ab</b>	505 and 529	543	>90	<b>2ab:4b</b> 1.7:1.0

[a] in CHCl<sub>3</sub>. [b] where ET = {1 - (fluorescence intensity of donor emission in cassette)/(fluorescence intensity of donor alone)} x 100 % [c] excitation at 488 nm.

FIGURE 4